

Application No.: 10/571998

Docket No.: NIW-031US

AMENDMENTS TO THE SPECIFICATION

At page 27, please replace the paragraph at lines 13-17 with the following replacement paragraph:

(65) A polymer solid electrolyte battery according to any one of (56) to (64), wherein a molar ratio $\frac{((XX)/(XXI)+C)}{((XX)/(XXI)+C11)}$ of the repeating unit represented by the Formula (XX) to a total of the repeating unit represented by the Formula (XXI) and the repeating unit included in the block chain $[[C]]C11$ is in a range of 1/30 to 30/1;

At page 100, please replace the first full paragraph with the following replacement paragraph:

2 g of the above obtained copolymer and 0.03 g and 0.5 g of glycidyl amine epoxy resin having three epoxy groups in the molecule ("Epotohto YH-434" produced by Tohto Kasei Co., Ltd.; epoxy equivalent: 120), which is a cross-linking agent, were dissolved in ~~20g~~ 20ml of acetone in an argon atmosphere. Then, 0.17 g of LiClO₄ was added thereto and dissolved uniformly.

Please replace the paragraph that spans pages 113-115 with the following replacement paragraph:

Into 70 g of toluene previously deaerated with argon were added 0.02 mmol of CPS, 0.1 mmol of p-SbP-1 obtained in Example 1, 13 mmol of m-t-butoxystyrene (hereinafter abbreviated as MTBST), and 5 mmol of n-octane, and these were mixed uniformly in an argon atmosphere. Then, 0.2 mmol of di-n-butylamine was further added thereto, and the copolymerization reaction was initiated by heating to 100°C while stirring. After a lapse of 30 hours from when the reaction was initiated, the reaction system was cooled to 0°C to terminate the copolymerization reaction. The GC analysis showed that the degree of conversion of MTBST was 50%. This reaction solution was subjected to column purification and purification under reduced pressure described above, and poly(MTBST-b-St-b-PME-1000-b-St-b-MTBST) (hereinafter abbreviated as "p-SbP-4") was finally obtained. The GPC analysis showed that the produced polymer was a single dispersion polymer of Mn=167,000.

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This p-Sbp-4 was dissolved in a mixed solvent of toluene/ethanol (weight ratio of 1:1), and a 10% solution was prepared. A reaction of deblocking protected groups was carried out for 3 hours at 65°C by adding 1.2 mmol of concentrated sulfuric acid. Next, the temperature of the reaction solution was made equal to room temperature, and 1 g of an acid absorbent ("Carplex#1120" produced by Showa Chemical Industry Co., Ltd.) was added into the reaction solution. The reaction solution was stirred for 10 min, and then filtered. A component of solvent was removed by volatilizing the filtrate under reduced pressure, and a copolymer in a semi-solid state was obtained. It was confirmed based on the ^{13}C NMR analysis of this polymer that the m-hydroxystyrene (hereinafter abbreviated as "MHS") backbone was formed through the completion of the reaction of deblocking the protected groups because no signal around 76 ppm derived from tertiary carbons of m-t-butoxy groups was recognized. The GPC analysis showed that this polymer was a single dispersion polymer of $M_n=162,800$. Moreover, the ^{13}C NMR analysis showed that the obtained polymer was a block/graft copolymer (hereinafter abbreviated as "BL-4") having a structure of poly (~~MHS-b-St-b-PME-1000-b-St-b-MGS~~) (MHS-b-St-b-PME-1000-b-St-b-MHS) wherein the ratio of the number of moles of repeating units derived from PME-1000 to the total repeating units in the copolymer was 58%, the ratio of the number of moles of repeating units derived from St was 29%, and the ratio of the number of moles of repeating units derived from MHS was 13%.

At page 125, please replace the first full paragraph with the following replacement paragraph:

From the results of the above charge-discharge test, it was found that a solid electrolyte battery having the following properties was obtained: initial discharge capacity: 81 mAh/g, charge voltage: 4.5 V, discharge voltage: 3.78 V and charge-discharge efficiency: 90%; discharge capacity after 20 cycles: 71 mAh/g, discharge voltage: ~~3.70 FV~~ 3.70 V and charge-discharge efficiency: 87%.

At page 140, please replace the last full paragraph with the following replacement paragraph:

340 mg of a powder of LiCoO_2 ("CellseedC-10" produced by Nippon Chemical Industrial Co., Ltd.; particle size: 10-15 μm) and 40 mg of ketjen black (KB produced by Ketjen Black International Co., Ltd.) were put in a mortar and mixed thoroughly.

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170 mg of a 12% by weight N-methyl pyrrolidone (NMP) solution of polyvinylidene fluoride (PVdF produced by Aldrich, molecular weight: 534,000) was added thereto, and mixed in thoroughly with a spatula. Then, the specimen was applied onto a capacitor of aluminum foil (80 mm×200 mm and thickness: 50 μm) with a doctor blade (width: 40 mm and air gap: 50 μm), and vacuum-dried at 100°C for 24 hours, and an anode layer was produced by pressing that at a pressure of ~~20 MPa/cm~~ 20 MPa/cm². The thickness of the anode was 32 μm , and the content of LiCoO₂ was 5 mg/cm².